TKB Home In Wall Dual Relay (1 Way) Switch Module TZ04 Manual

Contents

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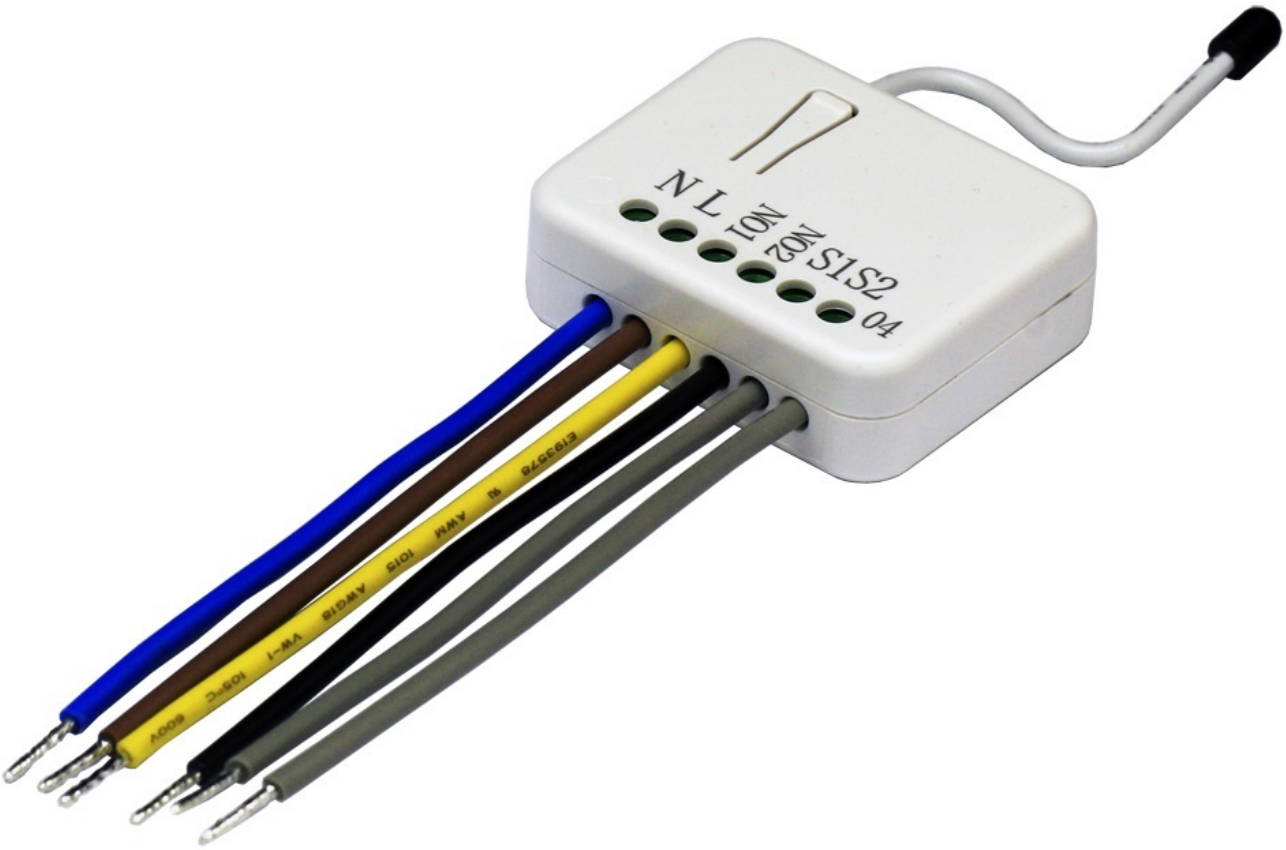
In Wall Dual Relay (1 Way) Switch Module

SKU: TZ04



Quickstart

This is a

On/Off Power Switch
for
CEPT (Europe).

To run this device please connect it to your mains power supply.

To add this device to your network execute the following action:
1. Put your Z-Wave controller into inclusion mode by following the instructions provided by the controller manufacturer. 2. Pressing INCLUDE_BUTTON three times within 2 seconds will enter inclusion mode.

Please refer to the
Manufacturers Manual for more information.

Important safety information

Please read this manual carefully. Failure to follow the recommendations in this manual may be dangerous or may violate the law.
The manufacturer, importer, distributor and seller shall not be liable for any loss or damage resulting from failure to comply with the instructions in this manual or any other material.
Use this equipment only for its intended purpose. Follow the disposal instructions.

Do not dispose of electronic equipment or batteries in a fire or near open heat sources.

What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section.

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.

This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to www.z-wave.info.

Product Description

This in-wall dual relay switch module is a transceiver which is a Z-Wave PlusTM enabled device and is fully compatible with any Z-WaveTM enabled network. Mini size design let the module can easily hide itself into the wall box and that will be good for the house decoration.This in-wall switch module is able to detect Instant power wattage and overload current (7.5A with resistive load) of connected light or appliances. When detecting overload state, the Module will be disabled and its On/Off button will be lockout of which LED will flash quickly. However, disconnect and re-connect the Module will reset its overload condition to normal status. Adding to Z-WaveTM NetworkIn the front casing, there is an on/off button with LED indicator below which is used to toggle switch on and off or carry out inclusion, exclusion, reset or association. When first power is applied, its LED flashes on and off alternately and repeatedly at 0.5 second intervals. It implies that it has not been assigned a node ID and start auto inclusion.Auto InclusionThe function of auto inclusion will be executed as long as the in wall switch does not have Node ID and just connect the switch to main power.Note: Auto inclusion timeout is 2 minute during which the node information of explorer frame will be emitted once every several seconds. Unlike inclusion function as shown in the table below, the execution of auto inclusion is free from pressing the On/Off button on the Switch.

Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state.** Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

Reset to factory default

This device also allows to be reset without any involvement of a Z-Wave controller. This procedure should only be used when the primary controller is inoperable.

Use this procedure only in the event that the primary controller is lost or otherwise inoperable. 1. Pressing

INCLUDE_BUTTON three times within 2 seconds will enter inclusion mode. 2. Within 1 second, press On/Off button again for 5 seconds. 3. IDs are excluded.

Safety Warning for Mains Powered Devices

ATTENTION: only authorized technicians under consideration of the country-specific installation guidelines/norms may do works with mains power. Prior to the assembly of the product, the voltage network has to be switched off and ensured against re-switching.

Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

Inclusion

1. Put your Z-Wave controller into inclusion mode by following the instructions provided by the controller manufacturer. 2. Pressing INCLUDE_BUTTON three times within 2 seconds will enter inclusion mode.

Exclusion

1. Put your Z-Wave controller into exclusion mode by following the instructions provided by the controller manufacturer. 2. Pressing INCLUDE_BUTTON three times within 2 seconds will enter exclusion mode. 3. Node ID has been excluded.

Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.
3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

Association – one device controls an other device

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed, sensor triggers, …). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a ‘Basic Set’ Command.

Association Groups:

Group NumberMaximum NodesDescription

1	1	Z-Wave Plus LifelineFor group 1, the Switch will report (1) ON/OFF status of Relay1 and Relay2 (2) Instant Power Consumption (Watt) of Relay1 and Relay2 (3) Accumulated Power Consumption (KWh) of Relay1 and Relay2 to Z-Wave Controller.
2	1	For group 2, the Switch will report (1) ON/OFF status of Relay1 (2) Instant Power Consumption (Watt) of Relay1 (3) Accumulated Power Consumption (KWh) of Relay1 to Z-Wave Controller.
3	1	For group 3, the Switch will report (1) ON/OFF status of Relay2 (2) Instant Power Consumption (Watt) of Relay2 (3) Accumulated Power Consumption (KWh) of Relay2 to Z-Wave Controller.

Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however certain configuration can adapt the function better to user needs or unlock further enhanced features.

IMPORTANT: Controllers may only allow configuring signed values. In order to set values in the range 128 … 255 the value sent in the application shall be the desired value minus 256. For example: To set a parameter to 200â€ˆit may be needed to set a value of 200 minus 256 = minus 56. In case of a two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

Parameter 1: Watt Meter Report Period

*If the setting is configured for 1hour (set value =720), the TZ04 will report its instant power consumption every 1 hour to the node of correspond Group. The maximum interval to report its instant power consumption is 45 hours (5s*32767/3600=45hr).*
Size: 2 Byte, Default Value: 720

SettingDescription

1 – 32767	720*5s=3600s=1 hour

Parameter 10: Existence of Endpoint3

Multi-Channel Command is a good way to control relay1 and relay2 of TZ04 individually. The endpoint3 of TZ04 is related to both relay1 and relay2. In some condition it becomes redundant in Multi-Channel Command Class. When the Existence of Endpoint3 is set as 2, the endpoint3 will be disabled. The default value is 1. Endpoint1 and Endpoint2 are fixed, only Endpoint3 is dynamic.
Size: 1 Byte, Default Value: 1

SettingDescription

1	1 : Endpoint3 exist
2	2 : No Endpoint3

Parameter 2: KWH Meter Report Period

*If the setting is configured for 1hour (set value =6), the TZ04 will report its Accumulated Power Consumption (KW/h) every 1 hour to the node of correspond Group. The maximum interval to report its Accumulated Power Consumption (KW/h) is 227.55 days (10min*32767/1440=227.55 days).*
Size: 2 Byte, Default Value: 6

SettingDescription

1 – 32767	6*10min= 1 hour

Parameter 3: Selected Relay

If Controller not using Multi_Channel command class to access the relay of TZ04, you may configure the select value to react the Basic Command ClassBinary Switch Command Class or Meter Command Class V3.
Size: 1 Byte, Default Value: 3

SettingDescription

1	1Relay1
2	2Relay2
3	3Relay1 & Relay2

Parameter 4: Edge and Pulse mode

Manual switch S1 and S2 can set to Edge mode or Pulse mode or Edge-Toggle mode, default value is Edge mode.
Size: 1 Byte, Default Value: 1

SettingDescription

1	1Edge mode
2	2Pulse mode
3	3Edge-Toggle mode

Parameter 5: Threshold of Current for Load Caution

This is a warning when the current of load over the preset threshold value, if the setting value is 750, when the load current of Relay1 or Relay2 over this value, TZ04 will send current meter report to the node of correspond Group, the Range of the setting value is from 10 to 750, and the default value is 750.
Size: 2 Byte, Default Value: 750

SettingDescription

10 – 750	750*0.01A = 7.5A

Parameter 6: Threshold of KWh for Load Caution

This is a warning when the KWh of load over the preset threshold value, If the setting value is 10000, when the Accumulated Power Consumption of Relay1 or Relay2 over this value, TZ04 will send KWh Meter Report command to the node of correspond Group, minimum value is 1KWh and default value is 10000 kWh.
Size: 2 Byte, Default Value: 10000

SettingDescription

1 – 10000	10000*1KWh = 10000KWh

Parameter 7: Restore switch state mode

Whenever the AC power return from lost, TZ04 will restore the switch state which could be SWITCH OFFLAST SWITCH STATESWITCH ON. The default setting is LAST SWITCH STATE.
Size: 1 Byte, Default Value: 1

SettingDescription

0	0 : Switch off
1	1 : Last switch state
2	2 : Switch on

Parameter 8: Auto off timer

Whenever TZ04 switches to on, the auto off timer begin to count down. After the timer decrease to zero, it will switch off automatically. However if Auto off timer is set as 0, the auto off function will be disabled. The default setting is 0.
Size: 2 Byte, Default Value: 0

SettingDescription

0	0 : Disable auto off function
1 – 32767	1-0x7FFF : 1s ~ 32767s

Parameter 9: RF off command mode

Whenever a switch off command, BASIC_SETBINARY_SWITCH_SETSWITCH_ALL_OFF, is received, it could be interpreted as 4 kinds of commands. 1. Switch OffIt switches to OFF state. The default setting is Switch Off. 2. IgnoreThe switch off command will be ignored. 3. Switch ToggleIt switches to the inverse of current state. 4. Switch OnIt switches to ON state.
Size: 1 Byte, Default Value: 0

SettingDescription

0	0 : Switch off
1	1 : Ignore
2	2 : Switch toggle
3	3 : Switch on

Technical Data

Hardware Platform	SD3502
Device Type	On/Off Power Switch
Network Operation	Always On Slave
Firmware Version	HW: 1 FW: 1.04
Z-Wave Version	6.51.02
Certification ID	ZC10-16015005
Z-Wave Product Id	0x0118.0x0001.0x0012
Frequency	XXfrequency
Maximum transmission power	XXantenna

Explanation of Z-Wave specific terms

- **Controller** — is a Z-Wave device with capabilities to manage the network. Controllers are typically Gateways,Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **Wakeup Notification** — is a special wireless message issued by a Z-Wave device to announces that is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.